

CLAIMS

What is claimed is:

1. A system for cloning input/output (I/O) devices connected to a network of an industrial control system, comprising:
 - a first network;
 - a plurality of I/O devices connected to said first network; and
 - a master computer coupled to said first network and including control software with an object oriented model for defining one or attributes, parameters and operations of said I/O devices to allow cloning of at least one of said I/O devices.
2. The system of claim 1 wherein said object oriented model includes a hierarchical class structure with inheritance properties.
3. The system of claim 1 wherein said hierarchical class structure includes a device class.
4. The system of claim 3 wherein said device class includes a plurality of device types.
5. The system of claim 4 wherein said object oriented model includes at least one class level hierarchically below said device class.

6. The system of claim 5 wherein devices instantiated at said at least one class level inherit said one of said attributes, parameters and operations of said at least one class level and a device type of said device class from which said at least one class level depends.

7. The system of claim 4 wherein said device types include at least one of analog and digital devices.

8. The system of claim 1 wherein said control software includes a graphical user interface for interfacing said control software and cloning said I/O devices.

9. The system of claim 1 wherein said I/O devices include at least one of barcode readers, sensors, actuators, and motor starters.

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10. A system for cloning input/output (I/O) devices connected to a network of an industrial control system, comprising:

a first network;

a second network coupled to said first network;

a first plurality of I/O devices connected to said first network;

a second plurality of I/O devices connected to said second

network; and

a master computer coupled to one of said first and second networks and including control software with an object oriented model for defining one or attributes and operations of at least one of said I/O devices on one of said first and second networks to allow cloning of said at least one of said I/O devices to the other of said first and second networks.

11. The system of claim 10 wherein said object oriented model includes a hierarchical class structure with inheritance properties.

12. The system of claim 11 wherein said hierarchical class structure includes a device class.

13. The system of claim 12 wherein said device class includes a plurality of device types.

14. The system of claim 13 wherein said object oriented model includes at least one class level hierarchically below said device class.

15. The system of claim 14 wherein devices instantiated at said at least one class level inherit said one of said attributes and operations of said at least one class level and a device type of said device class from which said at least one class level depends.

16. The system of claim 13 wherein said device types include at least one of analog and digital devices.

17. The system of claim 10 wherein said control software includes a graphical user interface for interfacing said control software and cloning said I/O devices.

18. The system of claim 9 wherein said first and second networks are connected by a gateway.

19. The system of claim 18 wherein said first and second networks are different types of networks.

20. The system of claim 10 wherein said I/O devices connected to said first and second networks include at least one of barcode readers, sensors, actuators, and motor starters.

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